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3 bis. **Catocala Robinsonii**, Grote.

♂ ♀.—I have alluded to this species above under *C. insolabilis*. The primaries are evenly smooth, pale greenish cinereous, without shades. This is a little stouter than *C. insolabilis*; larger and of a different hue compared with *C. retecta*. Median lines narrow and black. T. p. line acutely dentate; subreniform open. Median shade perceptible above reniform narrowly on costa, elsewhere not apparent. Median lines accompanied by pale shades. Subterminal indistinct, dentate, consisting of a darker outer and paler inner shade line. Hind wings black with white fringes. Beneath with narrow median white bands on both wings. Expanse 75 mm.

With the Californian species noticed by Dr. Behr, we have now fifty-eight (58) described North American species of *Catocala*, nine of which remain unknown to me.



Descriptions of North American NOCTUIDAE.—No. 1.

BY AUG. R. GROTE.

The typical specimens described in the present Series of Papers are contained in the Collection of Lepidoptera now belonging to the American Entomological Society and separately preserved, formerly the property of Mr. C. T. Robinson.

These descriptions have been written preparatory to a Revision of the North American Noctuidae, in which an attempt will be made to define the genera more completely and in accordance with the more recent classificatory views expressed by Lederer. — Dr. Herrich-Schaeffer's system for designating the nervulation has priority, seems the best and is used here.

1. **Hadena (mamestra) badistriga**, n. sp.—♂ ♀—Palpi thickly scaled, third joint small, concealed, maxillæ moderate, eyes hairy. ♂ antennæ simple, hind tibiae with two pair of small unequal spurs. Head and thorax blackish brown, collar pale. Anterior wings pale along costal region to beyond t. p. line. Ordinary spots obsolete. Of the usual lines only the t. a. and t. p. lines evident; these black, narrow, single, continuous, distinct. T. a. line running obliquely outwardly, roundedly projected to base of cell, thence inversely to internal margin. T. p. line evenly and greatly projected outwardly over the nervules without the cell, below which it runs inwardly and forms a notch on sub-median fold where it meets a broad blackish-brown shaded dash extending from base of wing to this point. A second similar dash along the disc, stretching from t. a. line along median fold. The wing is shaded with brown, more

continuously terminally where the veins are marked with blackish. A double narrow interrupted terminal line. T. p. line followed by a paler shade rendering it very distinct. ♂ secondaries wholly whitish, ♀ darkly bordered, crossed by a faint post median and distinct terminal line; fringes whitish. Beneath, the t. p. line on primaries is faintly marked as is the transverse line on secondaries superiorly; marginal interrupted lines distinct. Expanse 30 to 32 mm.

Habitat.—Canada, New York State.

Varies in the more or less evident pallor of the collar and costal region of primaries. I have bred this species from larvæ found on the common honeysuckle Saunders Collection, No. 631.—Differs much from its congeners in appearance. The white ♂ secondaries are somewhat pellucid.

2. **Emmelia (agrophila) apicella**, m.—♂ ♀.—Head and thorax above orange ferruginous; this color extends over the primaries obliquely downward at base. Beyond this, and margining it, a pale, whitish shade runs obliquely downwardly and is continued vaguely along the internal margin; apices with a similar distinct oblique patch, while the extreme costal edge is tipped with ferruginous; else the primaries are blackish as are the fringes except along the whitish apical patch. Hind wings and abdomen above blackish. Beneath the body parts are whitish. Expanse 16 to 18 mm.

Habitat.—Central Alabama; June.

This little species is not rare, occurring with *A. leo* and *A. dama*, *Guenée*. It is very distinct in its ornamentation from any of *Guenée's* species, of which it is possible there are in reality only two, *A. onagrus* being perhaps identical with *A. leo*. Under a microscope the blackish portion of the primaries above in *apicella* are seen to be dusted with pale scales. There are no traces of the ordinary spots and lines.

EUTOREUMA, m.

The porrect pointed palpi extend for half their length beyond the head. Front with a large rounded clypeal swelling, filling up the space between the eyes. Minute black ocelli. Maxillae moderate. ♂ antennae minutely and finely bristled. Abdomen long, linear. Thorax compact and squared. Wings angulate. Forewings produced at apices and extremity of vein 4. Veins 3, 4, 5, equidistant at base. Cell open; veins 6 and 7 together from s. c. nervure opposite 5. Vein 8 shortly out of 9 to apex. Veins 9 and 8 approximate. Vein 10 out of 9 to costa; 11 running close to s. c. nervure and 10 to costa. Hind wings with vein 5 equally strong; external margin rounded, cut away at anal angle from vein 1. Middle tibiae with terminal, and hind tibiae with two pair of unequal spurs. A species of moderate size, with dark discolorous collar elevated in front, close squamation, naked

clypeus hid by the long second palpal joint, even fringes, dark colors and appearing allied to *Toxicampa*.

3. *Eutoreuma tenuis*, m.—♂ ♀.—Brownish ashen; head palpi and collar blackish, discolorous with the paler thorax and abdomen. Forewings more or less clouded, or deeper colored superiorly, especially towards apices within apical streak. All the veins narrowly and neatly picked out by ochrey scales. Lines fine, ochrey with darker edges. T. a. line nearly straight. T. p. line even, acutely angled on vein 6, at which point it is joined by a distinct even oblique apical streak similarly colored. Below it runs evenly obliquely to internal margin nearly continuously with the apical streak. This latter with the upper part of the t. p. line above vein 6 form the two limbs of a Y. Reniform large, narrowly annulate with ochrey scales. Median shade dark, diffuse. Subterminal line fine, dentate, pale, issueing from above the middle of apical streak; terminal space pale with pale terminal line. The evenness and tenuity of the lines is noticeable. Secondaries a little darker than primaries; an oblique median line, similar to t. p. line, most obvious towards anal angle; a faintly marked subterminal line. Beneath, without markings; neuration perceivable from the folds in the wings. Expanse 28 to 30 mm.

Habitat.—Central Alabama; July, August. Of frequent occurrence.

MATIGRAMMA, m.

Palpi moderate, porrect; head rather square in front; clypeus roundly swollen, scaled; epicranium somewhat raised longitudinally. Maxillae moderate. Antennae simple, minutely ciliate in ♂. Abdomen linear; with the thorax not tufted or crested, smoothly scaled. Wings full, entire, rounded, with corresponding ornamentation. Fore wings with vein 2 a little nearer 3 than usual; 3, 4, 5 equidistant at base, divaricate; 6 opposite 5, from the point of divarication of 9 which crosses 7, thus closing and forming a very small accessory cell. Vein 8 to apex; 9 to costa; 10 from accessory cell; 9, 10, 11 approximate. Hind wings 9-veined; 3 and 4 from one point; 5 a little removed, equally strong; cell open as on primaries. A species of moderate size, with pulverulent, obscure, geometriform ornamentation or rather perhaps that of *Mania*. With a faint resemblance to some of the genera allied to Homoptera, this species seems rather related to *Euclidia*.

4. *Matigramma pulverilinea*, m.—♂ ♀.—Olivaceous blackish with powdered pale or greyish scales. Basal half-line and t. a. line faint, atomical, irregular waved, blackish, edged with pale scales. Median shade blackish, continued, irregular. Reniform difficult to perceive, of the ground color of the wing, with an encircling ring of loosely massed pale scales, erect, constricted medially. T. p. line and sub-terminal more evident and similar. The first is moderately and widely rounded superiorly, slightly interspaceally lunate, powdery grey with blackish bordering lines. Sub-terminal sub-parallel with the t. p. line, continued, distinct, similar in appearance with the t. p. line but without evident

blackish edging line; from the course of the t. p. line, these two nearly parallel lines are divaricate at costa. The sub-terminal space between these two lines is blackish, darker than the wing elsewhere, free from pale scales at the sides. Terminal line a series of blackish interspaceal marks followed by whitish scales. Fringes concolorous with terminal space. Secondaries resembling primaries; the median shade line obsoletely (not always perceptibly) continued. The t. p. and subterminal line are here more or less obviously continued from the primaries, as is the terminal line. Beneath almost without markings; faint dark discal shade dots and a more or less evident darker median line on hind wings. Expanse 30 to 34 mm.

Central Alabama; June and August. Quite common, entering the house to light. In this and preceding genus I take a slight tubercle on each side behind and very close to the eye as ocelli.

PLEONECTYPTERA, *m.*

The single species hitherto described has been referred to *Heliothis*. It belongs however to Guenée's *Quadrifidae* or Packard's sub-family *Cutocalinae*. Fore wings 12 veined: veins 3, 4 at base, divaricate; 5 from incomplete cross vein; costal veins aggregated; 8 thrown off shortly from 9 to apex; 9 crossing 7 and thus forming a small accessory cell above disc from which 6 is thrown off below; 6, 7, 8, divaricate; 11 out of centre of m. nervure to costa, beyond it the nervure is a little bent; 10 out of accessory cell near extremity, here 9, 10, 11, run closely together. Hind wings with vein 5 equally strong. Male fore wings beneath with a tuft of rigid hairs directed upward on vein 2 and a second above on median nervure. Legs finely scaled, ♂ hind tibiae bent, with a long external pencil of hair, middle and hind tibiae finely spurred. Palpi hanging, divaricate; maxillae moderate, antennae simple to the naked eye, ♂ with fine and short bristles. Body linear, closely scaled, abdomen a little longer than secondaries, ♀ pointed, ♂ with swollen genitals. The species resemble *Geometridae* and are bright colored.

5. ***Pleonectyptera pyralis*, Hübner sp.**—♂ ♀.—Head and collar dark purplish lead color, discolorous with thorax and abdomen which are yellow. Wings with corresponding ornamentation and color, yellow to the t. p. common line, beyond which they are dark reddish as are the fringes, less completely so in ♂. On these broad reddish margins may be seen a series of dots composed of black and white scale points, the common sub-terminal line; a dark apical streak; the t. p. line is yellow centered, geminate, its inner line blackish, acutely projected opposite the disc, oblique. M. shade and t. a. line continued, narrow, faint, blackish; former running just within the clouded reniform; orbicular a small black dot. Median shade continued across hind wings, faint, very near the equally faint discal streak. Beneath, the body and wings are stained with bright orange-red. ♂ Thorax white. Three black continuous ri-

vulvous lines cross both wings; discal spot on primaries large and distinct. Expanse 30 to 32 mm.

Cental Alabama; July. Readily flies when disturbed.

6. **Pleonectyptera geometralis**, m.—♀.—Size, ornamentation, and coloration beneath of ♀ *P. pyralis*; but above the wings are reddish fawn color, not clear yellow to the common t. p. line. Outside of this line the wings are terminally but little more reddish than centrally. The median shade and t. a. line are dark reddish; orbicular dot a little larger and m. shade closer to the less prominent reniform spot compared with *P. pyralis*. On the secondaries the common oblique t. p. line is removed nearer the base of the wing, close to the common m. shade line, the latter fusing with the discal mark.

Same locality with *P. pyralis*; June. A single specimen taken. Very distinct in appearance from the want of contrast in color between the wings terminally and centrally, so obvious in *P. pyralis*.

7. **Pleonectyptera phalaenalis**, m.—♀.—Much smaller than the preceding and differently colored and ornamented. Palpi divaricate and structure of body parts as in ♀ *P. pyralis*. Pale dull olivaceous fawn color with a reddish tinge especially on hind wings. On primaries above only two lines visible; the t. a. and t. p. lines, which are approximate. Both are obsoletely geminate, with pale included shade; the inner line wanting in the t. a. line and the outer in the t. p. line. Reniform blackish, sub-quadrate, relatively large, erect; orbicular a dot on the straight t. a. line. T. p. line slightly sinuate or projected superiorly. Hind wings with faint traces of an oblique transverse line as in the preceding species. Body above, concolorous with wings. Beneath, wings and body parts stained with vermilion. Above traces of a common dotted sub-terminal line. Beneath black discal dots and a faint black common transverse line. Expanse 24 mm.

Same locality with the preceding. A single specimen; August.

8. **Hypena toreuta**, m.

Hypena internalis, Rob. Ann. N. Y. Lyc. (nomen bis lectum).

♂ ♀.—Primaries entirely obscure sooty black. Ordinary lines indicated by minute white dots. On internal margin without and at base of the usual faintly indicated t. p. line is a conspicuous stained white spot. Secondaries blackish. Orbicular replaced by a small tuft of deep black raised scales. Expanse 28 to 30 mm.

Habitat.—Middle States. The female is a little the paler and allows the usual ornamentation of the primaries above to be more easily perceived. Very recognisable from the whitish blotch on internal margin. Not in frequent in various localities in New York State. The name given by Mr. Robinson has been used in the genus by Mr. Guenée, for a different species.

9. **Renia discoloralis**, Guenée.

♂ ♀.—This is the largest of our species of *Renia*, a genus readily recognised from the characters offered by the antennæ and labial palpi. The male antennae are thickened and finely bristled for over three-

quarters of their length when they are provided with a long dense and rigid tuft of hair, beyond this they are slender and curled. The female antennae are simple, and in both sexes relatively short. The male palpi have the second joint disproportionally elongated, fringed with long scales above, and are porrected; the female palpi are projected straightly forward after the fashion of *Hypena*, except in *R. restrictalis*. The structure of the palpi however varies slightly with the species. The male *R. discoloralis* has the primaries above of a clear brown, more or less pale owing to an admixture of light colored scales giving the wings in some specimens a powdery appearance. The t. a. line is narrow, thrice unequally waved. Median shade diffusely shaded, of varying distinctness, oblique. T. p. line inwardly lunulate, irregular, obsoletely geminate, the outer line hardly discernible and the line itself often obliterate. Orbicular small, usually distinct, rounded, pale yellowish. Reniform narrow, sub-luniform, clear pale yellowish or ochrey with an upper and lower black included dot; often these dots are connected by a middle line. Sub-terminal line distinct, geminate, with pale included shade, broken opposite the cell, projected on vein 4, again broken or indistinct below vein 3. A terminal line of interspaceal black points. Secondaries dark, crossed by two distinct lines. The male antennae are tolerably long from the base to the tuft. The long palpi porrect.

The female is usually discolorous. The sub-basal, sub-terminal and terminal fields of the primaries above are paler than the rest of the wing and give it a blotchy appearance. The color varies considerably. One specimen from Virginia is evenly ochrey griseous and has the ordinary spots deep yellow while the wing, thorax and head is more or less sprinkled or stained with deep yellow scales. The shorter antennae are simple; the labial palpi projected straightly forward, equally as long as in the male, terminal joints divaricate. One specimen resembles the ♂ in color but the primaries are more profusely powdered with pale scales. Expanse 35 to 40 mm.

Habitat.—New York, Pennsylvania, West Virginia, Virginia.

Not rare. Mr. Walker's *Hypena fallacialis* is a synonym. In the British Museum Collection the most discordant material has been arranged under *Hypena*, and many of the descriptions in the List under *Hypena* are of no value whatever.

10. ***Renia brevirostralis*, n.**—♂ ♀.—Pale ochrey or bone color. Male antennae shorter altogether and particularly so from the base to the usual tuft, compared with *R. discoloralis*. Female antennae simple. Male palpi porrect,

proportionally a little shorter than usual. Female palpi long, projected straightly forward, third joints divaricate. The sexes are alike in color, but the female primaries are a little deeper toned and the lines are less distinct except the sub-terminal. The primaries have a peculiar dotted appearance less from a sparse sprinkling of black scales than from the fact that little is usually perceivable of the lines than a series of distinct black nervular dots. Median shade more or less evident below the reniform, diffuse. Ordinary spots but little apparent, pale, of the usual shape; reniform with two black dots, but these are sometimes wanting and sometimes the spot is incompletely edged with dark scales. Sub-terminal line consisting of a geminate series of dots with a paler included shade; the line becomes more or less continuous towards costa. Secondaries paler than primaries with two tolerably evident and continuous transverse lines and a terminal series of black points as on primaries. Expanse 30 to 32 mm.

Habitat.—Pennsylvania, Alabama. Not unusual. Its pale Herminia-like color and dotted ornamentation render it very recognisable.

11. ***Renia larvalis*, m.**—♂ ♀.—Compared with *R. brevirostralis* the male antennae are longer. The position of the longer palpi does not differ between the sexes as much as usual, since in the male these are less obliquely porrected. This species is dull purplish griseous, evenly colored, with obliterate ornamentation. The ordinary spots are pale, yellowish and of the usual appearance; in all my ♂ specimens without dots; my single female has them distinctly connected. M. shade faint. The t. p. and sub-terminal lines barely perceptible; darker, irregular. Terminal lines as in *R. brevirostralis* but on secondaries more continuous. Expanse 32 to 34 mm.

Habitat.—Pennsylvania; Texas. The Texas specimen (Belfrage leg.) does not differ except by being a little darker and more distinctly marked. This species is but little larger than *R. brevirostralis*; the color is dull, obscure and faded looking. The t. p. line when perceivable is narrow, irregular, much as in *R. discoloralis*. The subterminal line is usually more apparent and is indicated by dotted aggregations of dark scales. The whole insect is very inconspicuously marked. The male antennae are rather noticeably pale colored.

12. ***Renia restrictalis*, m.**—♂ ♀.—The narrowest species known to me. Glossy purplish blackish, darker than *R. larvalis*. Antennae as usual, but the female palpi are shorter and notably porrected, more so than in the male, in which sex they agree in appearance with *R. larvalis*. Lines indistinct, except sub-terminal which consists of a series of small *equal* double dots (the outer faint) with pale included shade, much as in *R. brevirostralis*. Ordinary spots small, as usual yellowish; reniform in all my specimens without dots. Secondaries nearly equally dark and concolorous with primaries with tolerably evident transverse lines. The sexes do not differ in color, but as in *R. brevirostralis* and *R. larvalis*, the male wings are a little narrower, primaries more pointed at the tips, while in the female the wings are fuller, the external margins more roundly exerted. Expanse 27 to 28 mm.

Habitat.—Pennsylvania. This species reminds one a little of *Aglossa*.

In all the species hitherto discussed the transverse posterior line is narrow, irregular, lunulate or rivulous, tending to be marked with nervular dots. In the two following it is even, of the usual Noctuid sub-sinuate appearance and quite distinct.

13. ***Renia centralis*, m.**—♂ ♀.—Blackish, obscurely colored. Size small, form slight, wings rather full; ♂ antennæ slender, ornamented as usual, ♀ simple; ♂ palpi long, strongly porrected, ♀ palpi projected obliquely forwards. Deeper shaded on costal region. T. a. line narrow, linear, irregular. Orbicular yellowish, indistinct, black ringed. Reniform yellowish, of the usual form, black ringed and black dotted, inconspicuous. T. p. line irregular, linear, followed by a pale shade apparent at costa. Subterminal followed by a pale shade also apparent at costa. Terminal black nervular dots. Secondaries nearly concolorous with primaries with the usual ornamentation, lines very evident relieved by very pale shades towards anal angle. Beneath the two subparallel common wrinkled lines crossing both wings are very distinct and relieved by following pale coincident lines or shades; blackish discal marks on both wings. Expanse 23 to 26 mm.

Habitat.—West Virginia.

More distinctly marked than the two preceding species, while similar in color.

14. ***Renia pastoralis*, m.**—♂.—Palpi porrect; male antennæ as usual, wings a little wider than in preceding species. Dull obscure brownish, paler within t. p. line. Reniform with the customary dots, less prominently discolored than usual. T. p. line even, gently curved, continuous, pale with indistinct dark marginal lines. Subterminal similar in appearance, but less distinct, pale, irregular inferiorly, broken opposite the disc and again inferiorly more or less plainly. Terminal line dotted on primaries, continuous on hind wings. Hind wings like primaries, a little lighter colored within the two transverse pale lines continued from primaries. Beneath the pale common line is evident. Expanse 28 mm.

Habitat.—Pennsylvania. My two specimens differ slightly and of one I have no locality. The transverse anterior line is very faint and median shade not perceptible in my specimens.

15. ***Renia Belfragei*, m.**—♂ ♀.—Darker colored than *R. pastoralis* with distinct lines. Palpi a little longer in the female, in both sexes sub-porrected, in the male held as in *R. pastoralis*. T. a. line even, distinct, dark, with preceding pale shade. Reniform black dotted, small, inconspicuous, not discolored, as in *R. pastoralis*. T. p. line even, curved, continued, resembling t. a. line, with a following pale shade. Sub-terminal line indistinct, propinquitous, vaguely indicated by darker scales, with a faint succeeding pale shade, irregular. Terminal narrow black lines sub-continuous on both wings. Secondaries similarly colored with primaries and with the t. p. line continued across them nearly as distinctly. Beneath the propinquitous t. p. and sub-terminal lines of the upper surface are distinguishable. Expanse 26 to 27 mm.

Habitat.—Texas (Belfrage leg.). Similar to *R. pastoralis* but darker and more distinctly darkly lined.

I am sure I hope Mr. C. V. Riley will continue to copy my descriptions in this Family in the Missouri Reports, and avail himself, even without acknowledgment, of all other information useful to himself in my writings, without at the same time continuing a style of remark that is repugnant to good taste and cannot deserve any worthy popularity. In, as I believe, redescribing *Acronycta lepusculina* Guenée, the remarks as to the description of *A. occidentalis*, G. & R., only betray an unacquaintance with the species of the genus; otherwise, since the European *A. psi* and the American *A. occidentalis*, are not at all to be properly compared with the species of Mr. Riley discusses, it would seem to be only for the sake of the opportunity for a reflection that a comparison is instituted. An entire description of *A. occidentalis* seemed superfluous, since our species offers but few points of difference when compared with its European analogue; these points were briefly given. And no one else seems to have misunderstood our species; while the synonymical remarks accompanying the description rendered a mistake impossible to any informed person. Mr. Saunders, in the pages of the Canadian Entomologist, has since found some of the slight points of difference drawn from the imagoes inconstant, and has added other slight specific characters, while showing the larvae of the two species to be quite distinct in color and appearance. In the birth of his new species of *Acronycta*, Mr. C. V. Riley indulges in a burst of wild comparison that betrays rather than conceals his unacquaintance with his subject. In another place Mr. C. V. Riley exhibits a fine sample of that impertinence which has its origin in lack of thought and consideration, in refusing to regard the West Indian and South American *Philampelus satellitia* (*lycaon*, Cramer), as distinct from our United States *Philampelus pandorus* (*satellitica* † Harris, *ampelophaga*, Bois. MSS.), and this without knowing both of the species he incorrectly unites. It is perhaps not to be wondered at, that while gathering all his synonymical information in the Sphingidae from my own and Mr. Robinson's Catalogue and List, Mr. C. V. Riley should accept so much and rudely and badly criticise so little. For his information, and not in defense of Hübner or Geyer, it may be stated that *Cnotus* is taken from the Greek, and not necessarily any more "gibberish" than the surname of the gentleman. I think that the literary Executors of the late lamented Mr. Walsh have cause for an action for piracy against Mr. C. V. Riley for using quotation marks to the verb eliminate, without due credit to the author of the witticism. But then of course much more valuable property of the deceased is worn and badly worn by our Entomological Elisha.